

REMARKS

By the above amendment, minor informalities in the Substitute Specification have been corrected, claim 1 has been amended to clarify features of the present invention with dependent claims 2-8, 10, 11 and 14 being canceled, and the other dependent claims 9, 12 and 13 being amended to conform to the language of claim 1. Applicants note that claims 15-20 stand withdrawn from consideration and by the present amendment, new claims 21-25 have been presented, wherein claims 21-23 depend from claim 1, and claims 24 and 25 are new independent claims.

Also, submitted herewith are corrected drawings in light of the Examiner's approval of the proposed drawing correction.

At the outset, applicants note that the present invention is directed to a display device for displaying video data wherein the luminance characteristics of video data or signals is determined such as a luminance distribution of the video signals which are inputted from tv broadcasting, personal computer, video tape recorder and/or dvd player, for example, so as to determine the gradation characteristic for every frame and to conduct gradation correction to the video signals based on the determined gradation characteristics with the corrected video data being displayed. In this manner, the conspicuous or clear impression of the displayed image quality is improved. Applicants note that the circuitry is described in the specification of this application and illustrated in the drawings. As now recited in independent claim 1, a detection circuit is provided for detecting a luminance distribution indicative of generation frequency of gradations in each of a plurality of divided regions, each divided region including a plurality of gradations based on the video data which is inputted. Reference is made to the histogram of Fig. 23 which is described at pages 52 and 53 of the specification of this application, and shows the generation frequency of gradations in each of the plurality of divided regions and corresponds to the relation between output gradation number and input gradation number of Fig. 8 of the drawings of this application, which is described at page 29 of the specification,

for example. As further recited in claim 1, a determination circuit is provided for determining a divided region of a higher generation frequency of gradation than that of other regions based on the luminance distribution (see region 5 of Fig. 23), and a correction circuit is provided for correcting the video data so as to make a luminance characteristic of the divided region of higher generation frequency of gradation more abrupt than a luminance characteristic of the other divided regions (see region 5 of Fig. 8), with a display panel being provided for displaying the corrected video data. When not changing the video data, for example, and when generation frequencies of gradation of divided regions are the same, that is, input gradation number and output gradation number are the same (see Fig. 6 as described at page 27 of the specification, for example), the situation arises that the input gradation number of a divided region 5 is 32 and an output gradation number of the divided region 5 is also 32, as represented by Fig. 6. On the other hand, when a generation frequency of gradation of the divided region 5 is higher than the generation frequency of gradation of other divided regions, as shown in Fig. 23, for example, in accordance with the present invention, a correction circuit increases the output gradation number against the input gradation number of the divided region 5 more than the output gradation number against the input gradation number of the other divided regions in the manner as illustrated in Fig. 8 of the drawings of this application, as described at page 29. Thus, for example, if the input gradation number of a divided region 5 is 32 and the output gradation number of the divided region 5 is 36, as represented by Fig. 8, for example, in accordance with the present invention, the luminance characteristic of the divided region 5 becomes more abrupt than the luminance characteristic of the other divided regions by increasing the output gradation number against the input gradation number of the divided region 5 more than the output gradation number against input gradation number of the other divided regions, as illustrated in Fig. 8, for example. In this manner, the contrast of the divided region 5 becomes higher than the contrast of the other divided regions. Applicants submit

that claim 1, as amended, clearly recites the aforementioned features of the present invention.

With respect to newly added independent claims 24 and 25, in addition to reciting a detection circuit and a determination circuit in a manner similar to claim 1, claim 24 recites the feature of a correction circuit "for correcting the video data by increasing an output gradation number against an input gradation number of the divided region of higher generation frequency of gradation more than an output gradation number against an input gradation number of other divided regions", while claim 25 recites the feature of a correction circuit "for correcting the video data so as to emphasize contrast of the divided region of higher generation frequency of gradation more than contrast of the other divided regions", thereby reciting the features as described above in a different manner. As pointed out above, by increasing the output gradation number against input gradation number of the divided region 5, as illustrated in Fig. 8, for example, the luminance characteristic of the divided region 5 becomes more abrupt and thus the contrast of the divided region 5 becomes higher. Thus, newly added independent claims 24 and 25 recite similar features to that of claim 1 and applicants submit that the independent and dependent claims of this application are not disclosed or taught in the cited art, as will become clear from the following discussion.

The rejection of claims 1, 9 and 11 under 35 U.S.C. 102(e) as being anticipated by Ogawa (US Patent No. 6,084,567); the rejection of claims 2-8, 10 and 12-13 under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Tsuji et al (EP 0,516,084); and the rejection of claim 14 under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Tsuji and further in view of Yamakawa (US 2002/0033830); such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 U.S.C. 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

With regard to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be

remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Turning first to the rejection of the claims as being anticipated by Ogawa, applicants submit that irrespective of the position set forth by the Examiner, applicants submit that while this patent discloses correction of an image signal, Ogawa discloses that the depletion of luminance of a CRT display device 2 can be monitored by always monitoring the anode current of the CRT display device, which is approximately equal to the cathode current amount of the electron gun 11 and when depletion of luminance is detected, the luminance characteristics or gradation characteristics are changed in accordance with a corrected gradation converting table, as described in col. 5 of such patent. Irrespective of this disclosure of Ogawa, applicants submit that Ogawa does not disclose in the sense of 35 U.S.C. 102 or teach in the sense of 35 U.S.C. 103 the features as recited in the independent and dependent claims of this application, including a detection circuit for detecting a luminance distribution indicative of generation frequency of gradations in each of the plurality of divided regions, wherein each divided region includes a plurality of gradations based upon video data which is inputted. Furthermore, there is no

disclosure or teaching in Ogawa of a determination circuit for determining a divided region of higher generation frequency of gradation than that of other divided regions, nor a correction circuit for correcting the video data to make a luminance characteristic of the divided region of higher generation frequency of gradation more abrupt than a luminance characteristic of the other divided regions (claim 1), or to increase the output gradation number against the input gradation number for the divided region of higher frequency of gradation more than an output gradation number against an input gradation number of other divided regions (claim 24), or so as to emphasize contrast of the divided region of higher generation frequency of gradation more than contrast of the other divided regions (claim 25). Ogawa provides no disclosure concerning detecting a luminance distribution indicative of generation frequency of gradations in each of a plurality of divided regions and determining a divided region of higher generation frequency of gradation than that of other divided regions based on the luminance distribution and effecting correction in the manner set forth. As such, applicants submit that independent claims 1, 24 and 25 and therewith the dependent claims patentably distinguish over Ogawa in the sense of 35 U.S.C. 102 and 35 U.S.C. 103, and should be considered allowable thereover.

Applicants note that in applying Ogawa, the Examiner refers to "broad claimed language" and as pointed out above, the claimed language of the independent and dependent claims recite features not disclosed or taught by Ogawa.

Applicants note that in rejecting claims under 35 U.S.C. 103, the Examiner recognizes that Ogawa does not mention the limitation "correcting the gradation such that gradation of higher generation frequency than that of other gradation is relatively higher compared with that for other gradation in the luminance characteristic and contends that such deficiency is overcome by the citation to Tsuji et al". Irrespective of the position set forth by the Examiner, applicants submit that Tsuji et al fails to disclose or teach the claimed features therein. Tsuji et al discloses that an average luminance level detecting circuit detects the average luminance level (APL), and that

when the APL is high, the accumulation start luminance level is made large thereby suppressing the floating of the luminance level on the black side. On the other hand, when the APL is low, Tsuji et al discloses that the accumulation start luminance level is made small thereby suppressing of excessive increase of the luminance level of the white side. Irrespective of this disclosure in Tsuji et al, applicants submit that Tsuji et al does not disclose or teach a detection circuit for detecting a distribution indicative of generation frequency of gradation in each of a plurality of divided regions, wherein each divided region includes a plurality of gradations based on the video data which is inputted, and a determination circuit for determining a divided region of higher generation frequency of gradation than that of other divided regions based on the luminance distribution, as recited in each of independent claims 1, 24 and 25. Applicants submit that even if the APL is detected in Tsuji et al, Tsuji et al provides no disclosure or teaching of detecting generation frequency of gradation in each of a plurality of divided regions, and Tsuji et al does not disclose or teach correcting gradation to make a luminance characteristic of the divided region of higher generation frequency of gradation higher or more abrupt or to improve contrast with respect to other divided regions as recited in the independent and dependent claims of this application. While Tsuji et al can change the entire luminance characteristic because of changing the accumulation start luminance level, Tsuji et al does not disclose or teach changing only the luminance characteristic of divided region of higher generation frequency of gradation, as recited in the independent and dependent claims of this application. Thus, applicants submit that the combination of Tsuji et al and Ogawa fail to provide the claimed features as set forth in the independent and dependent claims of this application in the sense of 35 U.S.C. 103, and all claims should be considered allowable thereover.

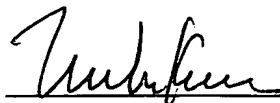
As to the further combination of Yamakawa with Ogawa and Tsuji et al, applicants note that Yamakawa is cited for the feature of "polygonal line" as set forth

in claim 14 which has been canceled, such that applicants submit that this rejection has been obviated by the cancellation of claim 14. In any event, applicants submit that irrespective of the position set forth by the Examiner, Yamakawa does not overcome the deficiencies of Ogawa and Tsuji et al as pointed out above in that Yamakawa also fails to disclose or teach the features of a detection circuit, determination circuit and correction circuit, as recited in independent claims 1, 24 and 25 and the dependent claims of this application. Thus, applicants submit that all claims under consideration in this application patentably distinguish over this proposed combination of references in the sense of 35 U.S.C. 103 and should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims under consideration in this application recite features not disclosed or taught in the cited art in the sense of 35 U.S.C. 102 and 35 U.S.C. 103 for the reasons given above, and all claims should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (501.39894X00) and please credit any excess fees to such deposit account.

Respectfully submitted,



Melvin Kraus

Registration No. 22,466

ANTONELLI, TERRY, STOUT & KRAUS, LLP

MK/cee
(703) 312-6600